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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|-------------------------------|---------------------|------------------|
| 10/649,720 | 08/28/2003 | Eric Lainet | Q76694 | 6179 |
| 7590 06/09/2006 | | | | |
| SUGHUE MION, PLLC Suite 800 2100 Pennsylvania Avenue, N.W. Washington, DC 20037-3213 | | EXAMINER DEGHAN, QUEENIE S | | |
| | | ART UNIT PAPER NUMBER 1731 | | |

DATE MAILED: 06/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|--------------------------------------|--------------------------------------|--|
| Office Action Summary | Application No. 10/649,720 | Applicant(s) LAINET ET AL. | |
| | Examiner Queenie Dehghan | Art Unit 1731 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 2 recites the limitation "the ratio r/R " in line 1. There is insufficient antecedent basis for this limitation in the claim. Although R and r are later defined, the claim should be reworded such that it does not depend on claim 1 to claim a r/R ratio.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-2, and 5-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Shimazu et al. (US 2004/0003628). Shimazu et al. disclose a pulley with a convex surface (25) that oscillates in rotation in a clockwise and counterclockwise direction to apply a torque on an optical fiber during drawing ([0046], figures 2A-2C). Shimazu et al.

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further disclose a radius of the pulley and of the curvature of the convex surface as 100mm, giving it a r/R ratio of 1 ([0054], [0056], figure 2C). Shimazu et al. further disclose a pulley wherein the radius of curvature of the convex portion of said peripheral external surface is constant over the whole of convex surface of the pulley and that the entire peripheral external surface is convex with no guide rims (figure 1). In addition, Shimazu et al. disclose providing a swing angle of the convex pulley that is low to prevent the slipping of the fiber on the pulley's surface ([0021]).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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7. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimazu et al. (US 2204/0003628) in view of Tsurusaki et al. (English translation of JP 2001-048568). Shimazu et al. disclose a radius of the pulley as greater than 50mm ([0056]) and that the radius of a second swing guide roller, which is concentric to the convex swing guide roller ([0046]). Additionally, Shimazu et al. mentions the dependency of the radius of curvature to the diameter of the fiber that is to be twisted ([0054]). However, Shimazu et al. do not teach a r/R ratio in the range of $\frac{1}{4}$ to $\frac{1}{2}$. Tsurusaki et al. teach a concave guide roller used for the twisting/spinning of optical fiber that is similar to the one disclosed by Shimazu. Furthermore, Tsurusaki et al. teach the diameter of the concave surface of the pulley to be in the range of 5-40mm and that the diameter of the pulley and radius of curvatures to be arbitrarily picked depending on the amount of PMD to be controlled and the diameter of the fiber to be spun/twisted ([0011], [0020]), which is similar to the teachings of Shimazu et al. Tsurusaki et al. also teach an example where the pulley diameter is 150mm, radius 75mm ([0023]). With a radius of curvature of 20mm and a radius of the pulley at 75mm, the r/R ratio is between $\frac{1}{4}$ and $\frac{1}{2}$. It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the radius and r/R ratio of the concave pulley of Tsurusaki et al. and impose similar dimensions in the convex pulley of Shimazu et al. since the two pulleys of Shimazu et al. are concentric with very little clearance between the two (exemplified in [0056]) in order to control the PMD reduction in the optical fiber to a desired value.
8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimazu et al. (US 2204/0003628) in view of Roba et al. (US 2001/0020374). Shimazu et al.

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disclose a radius of the pulley and of the curvature of the convex surface as 100mm, giving it a r/R ratio of 1 ([0054], [0056], figure 2C), but do not disclose a pulley with a radius of less than 50mm. Roba et al. teach of a pulley (16 in fig. 1) that has a diameter anywhere from 30mm to about 100mm (or radius of 15mm to 50mm) that is used for spinning the optical fiber as it is drawn ([0080], [0067]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the pulley size of Roba et al. with the r/R ratio of Shimazu et al. in order to controlled the PMD reduction in the optical fiber to a desired value.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Queenie Dehghan whose telephone number is (571)272-8209. The examiner can normally be reached on Monday through Friday 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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